

Accepted March 24th 1827
An W. D. H.

Inaugural Dissertation

Upon the

Cholera or Bilious Diarrhoea

Of

Infants

Submitted to the examination of the Medical Faculty

of the

University of Pennsylvania

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of

Pennsylvania

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Cholera &c.

Cholera Infantum a disease peculiar to our country, & one fraught with the most injurious consequences has since the introduction of Calomel for its cure by Dr. Miller been disarmed of some of its former violence. Yet notwithstanding this "Sampson" of remedies, it still remains the dread of Parents, the Bane of Children & the Scourge of Cities, particularly in the middle & Southern portions of the United States.

It makes its appearance with the hot weather, not being much influenced by the time whether it be in June July August or September, and continues as long as the heat lasts. It commences, in severe cases, suddenly with vomiting & purging, the matter discharged having different appearances in different cases or in the same case at different times.

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That discharged by the mouth consists first of the contents of the Stomach; afterwards principally of the secretions of that Organ & of the Liver. The discharges from the Bowels are sometimes copious and watery; at other times small in quantity of a dark or light green colour. At others again of numerous grains, or consisting of lumps mixed with a more fluid substance with or without much feces. At a more advanced period they often consist of the food but little altered by digestion.

In other instances either the vomiting or purging is entirely absent: But as a general rule from the commonness there is much exhaustion with a cold & clammy surface, particularly of the extremities, although the abdomen's head may be preternaturally warm.

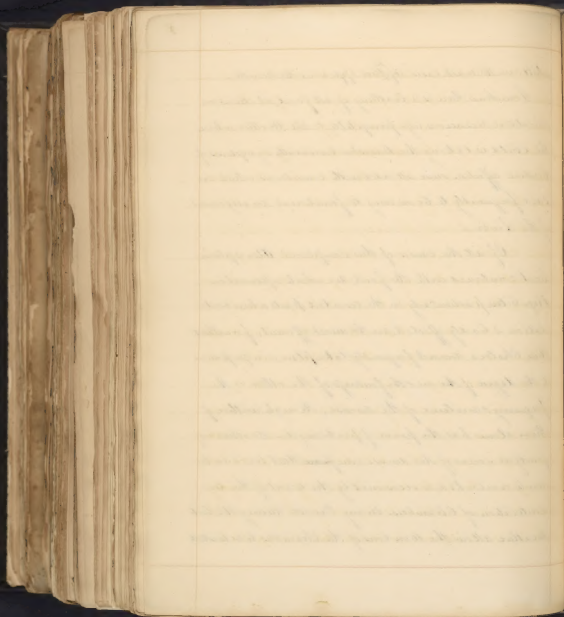
The Pulse is diminished in force & increased in frequency; the fever is evidently of the remittent kind & the exacerbations take place for the most part in the Evening with severe pain in the head: The countenance is pale & sunken, the Eye dull & the neck shrunk, the Thirst insatiable and all drink refused but cold water. The Tongue is furred

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white in the worst cases ^{the} ~~apthae~~ appear in the mouth—

Sometimes there is a loathing of all food; at others an unnatural voraciousness perceptible to the Mother when the Child is taking the Breast—Essentially symptoms of Cerebral affection occur attended with convulsions which are said frequently to be owing to functional derangement of the Liver—

Of all the causes of this complaint Atmospheric heat combined with the foul air which is present in large Cities, particularly in the crowded parts where ventilation is badly effected, are the most efficient; for without these Cholera does not frequently take place, & in proportion to the degree of the one & the foulness of the other is the frequency & violence of the disease, though neither of them alone has the power of producing it—Another very fruitful source of this disease, one ~~from~~ that has been too much overlooked, is occasioned by the want of the due ventilation of Chambers. Many Parents having the hot weather allow the windows of the Chambers to be hoisted



and from a common idea that night air is pernicious when a current is allowed to pass through open the doors should there be no windows on the opposite side, are particularly careful that the child should be placed in a situation most favourable for the draught the cold air being thus directly applied to the cutaneous vessels already morbidly affected by the excessive heat & fatigue which the child may have undergone the day previous, the circulation on the surface is impeded, the blood is driven from the circumference to the centre producing internal congestion & diminution of the Viscary Secretions.

While some Parents expose their Children in this way others are equally imprudent in running into the opposite extreme—They sedulously guard every avenue, shutting both windows & doors from their solicitude & misanthropic kindness provide for their Children soft beds and amply replace the clothes when kicked off by the unruly Child & in some instances to be out of all danger the Child is placed between its Parents. Now it is exposed to

the most efficient cause of Cholera: by them even the cutaneous vessels are excited into inordinate action, & the hepatic system by its sympathy with the surface partakes of that action: and accordingly aided by irritation an exhaustion is produced in them & general languor in the system: from the debility thus induced & by the sudden application of cold in this debilitated state the action of these parts is checked the blood is driven from the surface & accumulates in the portal system—

Next to this may be considered dentition, an impoverished diet, the use of Raper's element and a want of cleanliness, all of which may be considered rather as pre disposing causes—

Dentition independent of other causes is sufficient to produce irritation in the Alimentary Canal & hence in great measure the peculiar liability of children about the age of teething to this complaint.

Between the 5th month & the end of the 2nd year is



the most usual period for children to be attacked with cholera; although some have been attacked at the age of a few weeks - An impoverished diet and a spirit of element predispose to this disease by the delay which they produce in the Alimentary Canal and thus imparts to the whole system rendering it more liable to be acted on by the exciting causes of the complaint -

That a want of circulation is injurious is evident from the beneficial effects of Bathing of any kind - though it must be allowed that the cold Bath from its tonic power is superior to any other. Yet the obstruction of the pores on the surface by the coat of dirt has an injurious effect by impeding the insensible perspiration and consequently the Intestinal Canal will suffer in proportion.

That the seat of Cholera Infantum is the same as that of our Venereal diseases is probably correct; but that they are produced by the same causes and in the same situations and are cured by the same



means is not so clear; however between Cholera, Dysentery
and Bilious Diarrhoea there is considerable resemblance.

When the Liver and Portal system are sufficiently
excited & Congestion is produced by the above causes.
Nature attempts to relieve herself by an increased action
in the secretory vessels of the Liver, Stomach, or Intestines;
pouring out fluids different in quality & quantity
from what is natural, proving of course irritating.

When this increased action takes place in the
Liver in the mucous membrane of the Stomach or
Intestines with irritation of the parts we have Cholera.
If in the Liver alone, Bilious Diarrhoea, or if in the
Intestines attended with more inflammation it constitutes
Dysentery. Accordingly we find one of our
best remedies in Cholera equally well adapted to either
of these diseases viz. Calomel Spicamarina & Opium in
minute quantities continued - The Modus operandi of
which is plain -



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that Congestion of the Liver and Portal system takes place with irritation of the Mucous Membrane of the Alimentary Canal is evident from the symptoms & is still further proven by Post Mortem examinations.

Before entering on the treatment it may be necessary to state that no treatment is of such uniform success as removal to the Country in every stage of the disease. To attempt the cure of Cholera in the same vitiated atmosphere which gave rise to it is as difficult as it is to cure a Malignant disease in the wards of an Hospital.

Dr Rush says "of the many hundred children whom he has sent into the Country in every stage of the disease only three died" It is extremely agreeable to see the little sufferers revive as soon as they escape from the City air and inspire the pure air of the Country. Nor should we hesitate in the last stage to send them for the same reason mentions one case that recovered after convulsions had taken place.

When a Country residence cannot be procured they should ride out of the City daily in an open carriage or let them be exposed to the air of a River particularly to the motion of a Boat. Dr. Chopman says he has known incessant vomiting & purging checked by taking them across the river every day - It was the custom of my preceptor Dr. Parrish when Physician to the Dispensary to recommend Mothers who had Children threatened with or labouring under this complaint to take their work & go with their Children into the State House Yard & spend the day & if near the River to creep & sit in the shade of the Woods.

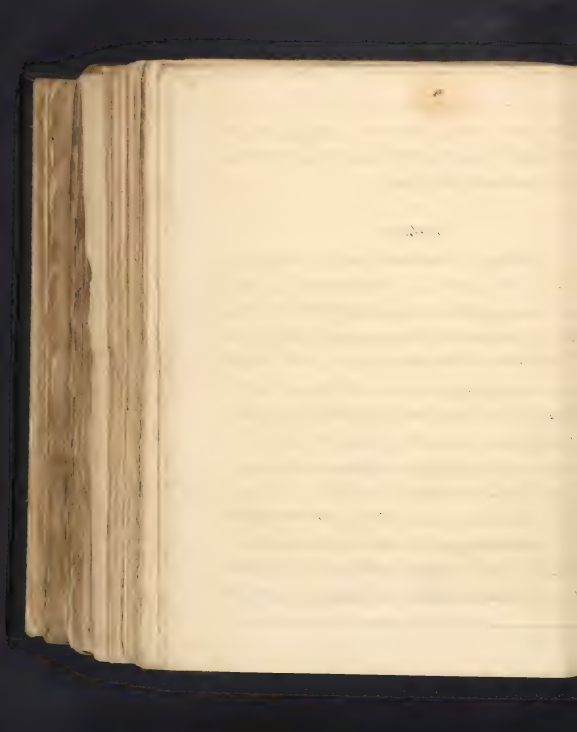
The indications in Cholera Infantum are
 1st To allay vomiting & irritability of the Bowels
 2nd To promote healthy secretions of the Liver, of the mucous membrane of the Bowels, and at the same time increase the circulation in the cutaneous vessels or in other words to invite back the force of the circulation from the internal to the external surfaces should



keep it by the judicious application of appropriate-unctuous
 3^d To check alvine evacuations should they still continue
 4th To react down to the System.

Treatment

This may be commenced in mild cases where the vomiting
 is absent with a combination of Castor Oil with some laudanum
 to carry off the irritating contents of the Intestinal Canal.
 But in severe cases where there is excessive vomiting & irritability
 of the Stomach this will not remain; but we must first
 allay irritability by fomentations to the Epigastrium &c.
 If these should be made with bladders with a hot dry cloth
 flushed free & the Child be vigorous the Laxative which
 is necessary for say Professor Chapman. This remedy is
 too often fatally withheld but in this we must be guided
 in great measure by the ability of the Child to bear
 it & by the nature of the prevailing Epidemic. Thus
 Dr. Rush found it necessary to bleed & in some instances
 two or three times in Cholera immediately succeeding the

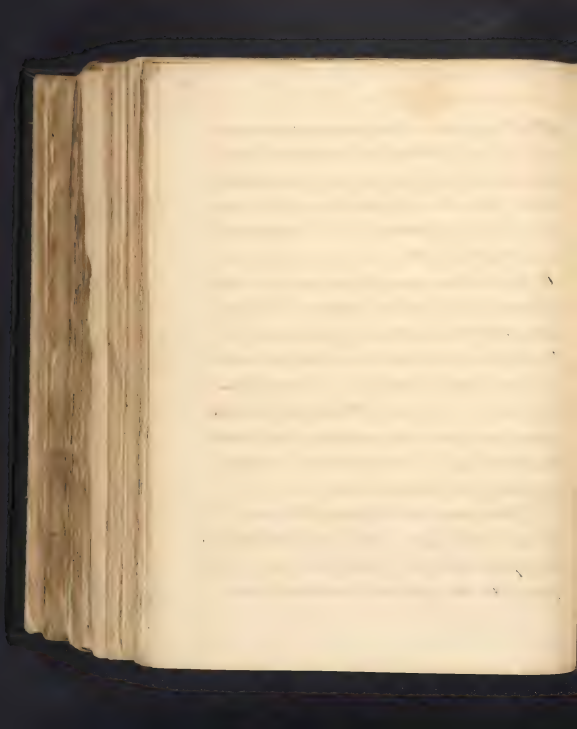


Yellow Fever of 1773, a disease that required so much bleeding - indeed what determined him to bleed was among other reasons "The Character of the Disease which had spread the Yellow Fever - They were all run a high inflammatory even the *Scarlatina Anginosa* had partaken so much of that diathesis as to require bleeding".

On the other hand during the prevalence of *Pharyngitis Tiphoides* most other disorders partook so much of its nature that the Laxative was usually laid aside.

In the case above stated attended with much excitement the bleeding may be followed by an Emission of *Sperma* *antra*; this will evacuate the Stomach of any irritating contents, will equalise the circulation at the same time tend to the Surface producing relaxation and relieve congestion of the internal viscera.

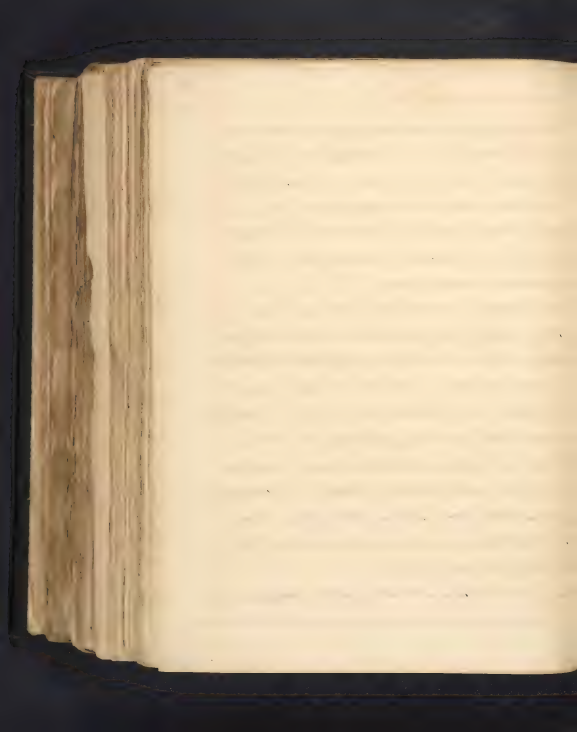
Dr. Miller says "As the Cholera of obliation is a febrile disease, and the Surface of the body often heated by and the proper point, it will be advisable to expose all such parts of the skin as far too warm to the heart, to a



stream of cool air, or to bathe them in cool water. Several times a day the patient should be washed with vinegar and water, salt & water, or water alone, by means of a sponge, & sit in bed, with as little motion, disturbances, or fatigue as possible. But in such cases perhaps the warm Bath is to be preferred as it would have a tendency to equalize the temperature more completely.

But in Cholera as it mostly comes the practice of bleeding is not only unnecessary but injurious. it is contraindicated by the weak pulse by the cold clammy surface, the shrunk neck & extremities & by the general prostration of the system. the little patient will look in the course of a day or two, as though there was nothing but skin upon its bones. In such cases leeches would appear not to be indicated from the profuse sweating which had already taken place attended with spasms & the great prostration of the system. And that Cold water is not indicated is evident from the already too cool surface.

Our first object here is to allay excessive ~~active~~ sweating.

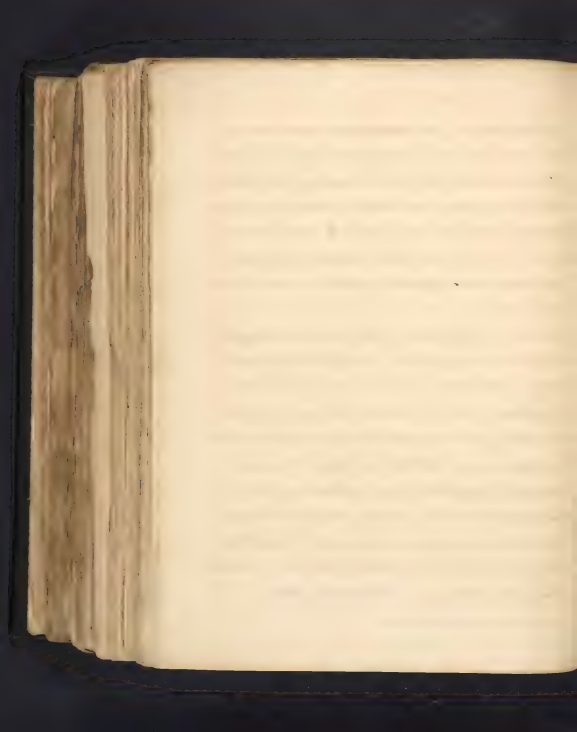


for thus from various remedies have been recommended. the milder ones might be resorted to if the urgency of the case would admit of it, as Chicken water and other mild diluents as recommended by Sydenham; the Chicken water given both by the mouth and rectum was particularly useful. Least water made with Oat bread was a favourite remedy of Dr Douglas. he would claim that he never knew it rejected in any case of Cholera. a cold infusion of Mentha Saliva, equal parts of Lime water & Milk, the citrate of Potash in small quantities, a solution of the Bicarbonate of Potash with a few drops of Laudanum or Rhoisai Chlorin—in some instances, Dr Howel states, by this remedy alone he has been enabled to subdue the disease & where it is not successful it allays pain and removes the distressing symptoms—

The Spirits of Turpentine is as highly recommended by Dr Wardie he says that he has not in any single instance in which he has employed it failed

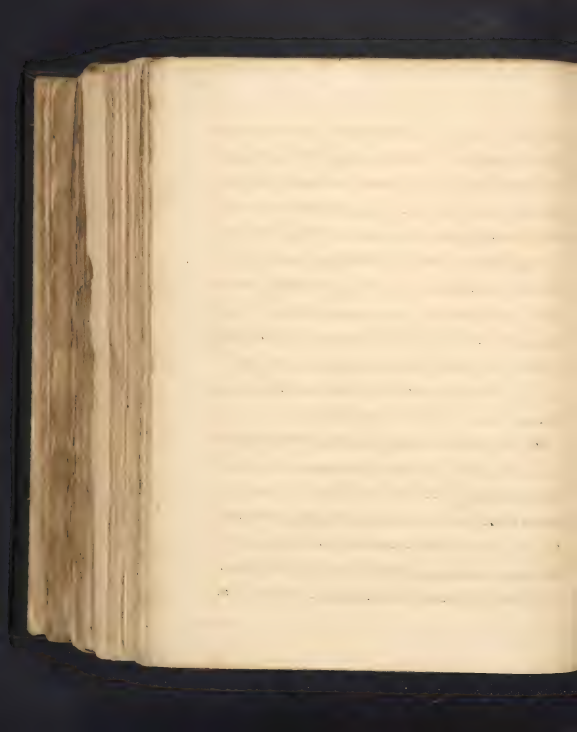
in speedily checking the ~~disordered~~ disordered action of the Stomach; nor; was the good effects confined merely to this but conduced the irritated sections of the Intestines, checked the griping and irritating stools, and produced a tendency to more healthy action. The doses in which he gave it, even from 10 to 30 drops according to the age of the Patient, he repeated 3 or 4 times in the course of the day—

A solution of Sulphate of Magnesia is also supposed to have some peculiar quality in allaying irritability of the Stomach; in cases of Scyrrhus I have long attended with Spasms, severe griping, thirst &c. Nitric Acid given in doses of a few drops every two hours has removed all the distressing symptoms and restored appetite & sleep. (See Stewart's case Medical Museum Vol 3. n. 2). In checking vomiting it is very easy at the same time to use external applications. If the feet are cold as is mostly the case care should be taken to restore heat and action in them,

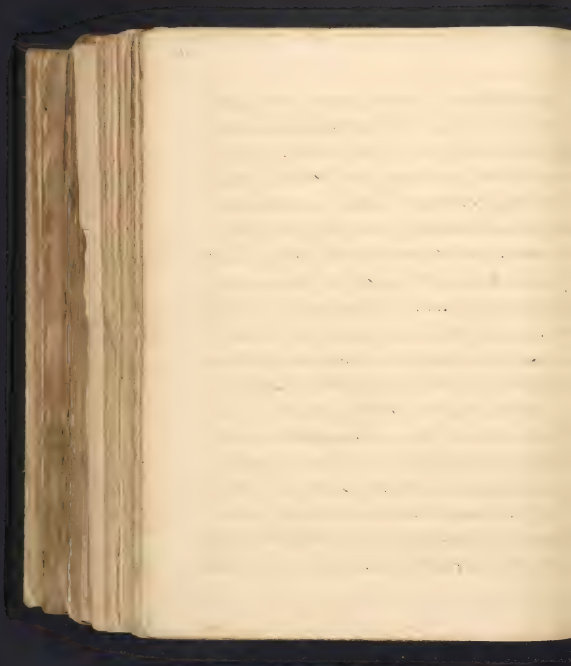


suitable covering and until this is effected we cannot expect success. But some of the most powerful Anticretics are yet to be enumerated. These are a spiced plaster composed of powdered cinnamon cloves and ginger mixed up with Honey & Brandy and equal to a Blister to the Epigastric region. It may be asked why so many remedies of the same nature and nearly equal in power should be enumerated - to this it might be answered not that they are all to be used in the same case, but to afford room for selection as they may best suit the nature of the case or can be more readily procured -

As soon as the vomiting has been allayed by one or by a combination of the above remedies or so soon as the irritability of the stomach will permit, we must attend to the second and most important indication viz. to correct the secretion of the Liver and of the mucus membrane of the Alimentary Canal & increase the circulation in the cutaneous vessels for this



Suppose the following formula is peculiarly well adapted.
 Calomel ij grs. Spucuantha ij grs. Opium ij grs. Divide into
 Spoonfuls one to be given every one or two hours for one day—
 And the following morning administer a Dose of Castor
 Oil or Syrup of Rhubarb or if there be much acidity in
 the prima via denuded by green frothy stools & acid
 eruptions a combination of Calomel Magnesia with
 powdered Rhubarb. The effects of this plan are plain.
 The Calomel possesses some peculiar property of correcting
 the secretions of the Liver whether they are increased or
 diminished in quantity or vitiated in quality. It is also
 thought to correct the secretions of the mucous surfaces—
 the Opium allays the irritability of the Stomach and
 Bowels and the Spucuantha tends to the surface,
 increasing the circulation in the extreme vessels. Thus
 equilibrium is restored to the vascular system & excre-
 tion of the internal viscera removed and a regular ex-
 crement equalised—cooperating with the above prescrip-
 tion the Warm Bath is a most important remedy and



one that should more be neglected, but as it is often
 evanescent it should be repeated at least every
 24 hours sometimes twice or three times till the skin
 assumes a temperature equal to that of health. This is
 an important indication & one that is too often neglected.

The recent cases Blisters applied to the Wrist, if there is
 great prostration, or to the ankles will often succeed in resus-
 cing the system from its lethargic state and the disease
 will assume a more manageable form.

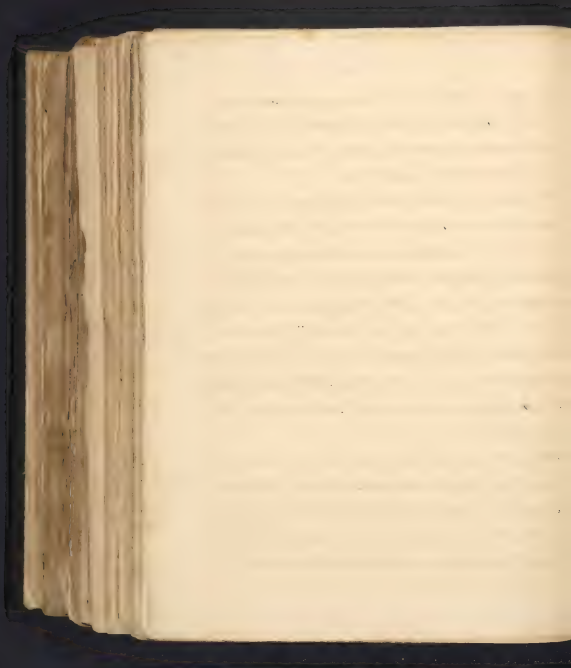
By these means we shall mostly either arrest
 the disease and prevent its making further ravages
 upon the system or it will pass, in a few days in
 some instances, or in other weeks, into a Simple Dis-
 rhexia attended with Tinnitus & Tinnitus. The best
 method of allaying the last mentioned symptoms is
 by injections of Laudanum united with flax seed oil
 or any other convenient mucilage or some Animal Oil
 as melted Butter or Lard - to simply check the too fre-
 quent discharge the chalk pulp combined with Kino



is very effectual—though there are many vegetable articles
suitable for the same purpose as a decoction of Dewberry root
or of Logwood, the spotted corns till or *Geranium maculatum*
boiled in Milk, Catubar &c. &c.

To impart tone to the System the different Tonics may be
given the best are Colombs, which has been thought particu-
larly adapted to all lowed complaints—the preparation of
Steel alone or combined with Bark or with a Mineral
acidity may be given in the following manner—Bark ℥ss
powdered Cinnamon ℥ij Lime Water ℥viij In some cases
the alkaline mixture may be used at the same time with
the Tonics Composed of Salt of Tartar ℥i Sandarum ℥jss
℞. ℞. Arabic ℥ij aqua Cinnamon ℥ss. A Teaspoonful given
every hour—

When the Stomach is too irritable to bear the use of
Tonics & yet they are indicated the Bark Tincture should
be applied—The diet should be nutritious consisting
of Breast Milk, nothing being more wholesome than the
Milk of a healthy Mother—when this cannot be



procured fresh loaves thickened with Arrowrootth
 sweetened with Loaf Sugar, also Essence of Beef in small
 quantities & frequently repeated. When there is no particu-
 lar indication for any medicine great advantage has
 been derived from some article of food, in support of
 which, when it has assumed a Chronic form, some
 singular facts have been related by Dr. Rush & Worsler
 and others. In this debilitated state the appetite for
 food has been suddenly awakened & the Child has
 partaken of some stimulating article as Salt Ham,
 Salt Herring, with grease, or even Butter itself & Drapp-
 let being indulged has speedily recovered. Dr. Wilson was
 in the habit of tempting his Patients to eat by placing articles
 of this description before them but in doing he found no appe-
 tite at all —

To allay the excessive thirst mucilaginous drinks or a solu-
 tion of the Bicarbonate of Potash or Seltzer Water given in
 small quantities & frequently repeated suit the best — is the
 case advances & should steadily become more apparent something



more stimulating will be denuded as Wine and Water Pills
used to commence with Punch made with Brandy. & seal
and Lemonade was a favourite remedy of Dr Griffiths

To prevent Cholera the child should have as
much Country air as possible. The Diet should consist of
mild nutritious food accompanied with a small portion
of good Wine and occasionally a little of the fat of lard.
All viscid articles particularly conifer fruit, should be re-
sisted. The clothing should be attended to, particularly the
feet—keeping them warm by wearing woollen stockings or
socks—flannel should be worn next the skin—

The child should sleep on a mattress or on Blankets
spread on the floor or packing bottom. The chamber should
be well ventilated at the same time not allowing a current
of air to pass over the bed. This may be done by opening a
door or a window in a remote part of the room. The Chim-
ney should be free from obstruction



The Cold Bath daily used is the most effectual prophylactic and one whose benefits are beginning to be duly appreciated—it preserves clearings of the surface, it imparts tone to the system and renders the cutaneous vessels ^{capable} to be affected by vicissitudes of weather. The most proper time for using it is before breakfast when the child is free from perspiration—About the period of Dentition constant attention should be paid to the gums & when tumid they should be lanced—by this means the child avoids much pain and irritations. The common objection to this that the Teeth are cut harder is groundless, for cicatrices should they form before the Tooth comes through are much more readily absorbed than original structure—Where irritation has arisen from Dentition as is frequently the case in the bowels complaints of Children it will often be relieved by Blisters behind the ears this was taught Dr Parrish from having observed a bowel complaint of Children, cutaneous eruptions, or affections of the head, to follow after the naturally formed sore behind

The first of these is the fact that the
 human mind is not a blank slate at birth.
 It is a complex of various faculties,
 some of which are developed at birth,
 and others which are developed during
 the course of life. The faculties which
 are developed at birth are the senses,
 the intellect, and the emotions. The
 faculties which are developed during
 the course of life are the will, the
 imagination, and the conscience. The
 senses are the faculties which enable
 us to perceive the world around us.
 The intellect is the faculty which enables
 us to think and reason. The emotions
 are the faculties which enable us to
 feel and experience the world around us.
 The will is the faculty which enables
 us to choose and act. The imagination
 is the faculty which enables us to
 create and invent. The conscience is
 the faculty which enables us to judge
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the ear had dried up - this natural process is irritated
 and with much success in their complaints, by applying
 Blister particularly if upon inquiry he ascertained that
 sore in that situation had been cured -

It is not that of the same kind as the
one which was in the beginning of the
first century of our era. It is not that
one in that it is not a copy of the